

CHAPTER III

RESEARCH METHODOLOGY

In this chapter, the researcher discusses research design, research method, population, and sample, instrument, data collection technique, data analysis technique, and research procedures.

A. Research Design

A research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose (Tavakoli 2012: 246-7 in Kaswan & Suprijadi 2016: 10).

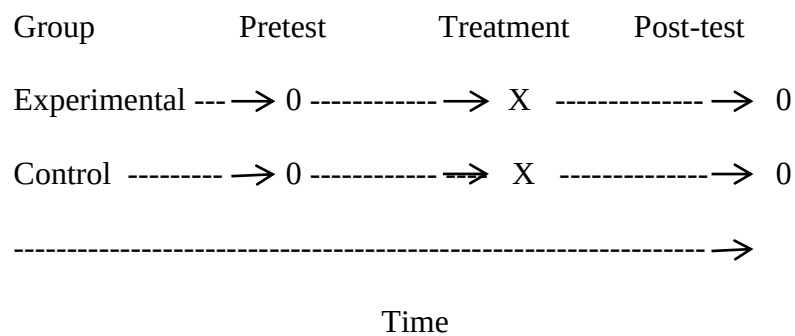
Quantitative research method can be classified into one of four broad research design: experimental design, correlational design, causal-comparative design, and survey research design (Creswell, 2012). In this research the writer used quasi-experimental design. This study took two classes of seventh grade students of Junior High School on the second semester as the experiment class and the control class to see the effectiveness of using jigsaw technique by looking pre-test and post-test measurement and comparing the gained scores between both classes.

The effectiveness can be seen from the improvement of students' score of experiment class in post-test after they had been given some treatments and from the comparison of both classes.

The research implements Collaborative Approach in the first class and Scientific Approach is implemented in the second class. This study

focuses on giving treatment to experimental class by applying jigsaw technique in teaching reading comprehension of descriptive text, and then the research observes the result through interview and test (pre-test and post-test) in order to know whether or not jigsaw technique is effective on students' reading comprehension descriptive text.

The process of this research can be presented by using the illustration below:



B. Research Method

In this research the researcher used quantitative method. Based on John W. Creswell (2012), the researcher builds a complex, holistic, picture, analyze words, reports detailed views of informants and conducts the study in a natural setting. Thus, this research was conducted to find out the difference of Collaborative Approach (with Jigsaw Technique) and Scientific Approach through administering pre-test and post-test to get the scores and to have numerical data.

C. Population and Sample

1. Population

According to Best (1997), population is any group of individuals that have one more characteristic in common that are of interest to the researcher. The population of the research was seventh grade students of SMPN 01 Sindangkerta. This school was selected because of the access.

2. Sample

Tavakoli (2012:47) defines sample as the smaller group portion of population. The sample of this research was students at class VII 1 and VII 2 in SMPN 01 Sindangkerta. This class was selected as the sample because their comprehension in reading was categorized as low. It was proved by their score in pre-test. Regarding the number of students, each class basically consisted of 35 students: VII 1 consisting of 22 males and 13 females and VII 2 consisting of 18 males and 19 females.

D. Instrument

The researcher used two kind as an instrument of the research; pretest which was given to the students before students got the treatment, and post-test which given after the students got the treatment.

1. Pretest

The researcher also used pretest as an instrument given to the students. The pre-test consist of 30 questions of multiple choices. Time allocation for pretest is 30 minutes. The purpose of giving pretest to

students is to know the level of students' vocabulary before being taught using jigsaw. The result of the pretest became the data that were then calculated.

2. Posttest

The researcher also used posttest as an instrument given to the students. The posttest will be given after treatment. The purpose of giving posttest is to know the level of students' vocabulary after being taught using jigsaw. The result of the posttest became the data that were then calculated.

Both the pretest and the posttest given to the students had the same questions, but in posttest the questions were arranged randomly. There were 30 questions.

E. Data Collection Technique

In collection data, the researcher gave vocabulary test to the students. The tests were divided into two steps. The first pretest is a test that the writer was used to see the students' vocabulary before treatment or before the writer taught them using jigsaw technique and the second, posttest is a test the writer was used to see the students' vocabulary after treatment or after the writer taught them using jigsaw technique. In collecting the required data in the pretest and posttest the writer used numeric scores on instruments in the form of objective tests which is multiple choices. The test consists of thirty questions.

F. Data Analysis Technique

After collecting the data, the researcher to analyze the data used the computer program of *Statistical Package of the Social Sciences (SPSS)* 23.0 and *Microsoft Office Excel 2010* for window program.

- a. Descriptive statistic is a wide variety of techniques that allow us to describe the general characteristics of the data we collect (Kaswan & Suprijadi, 2016: 107). The central tendency (typical score) may be assessed by the mean, median, or mode. Descriptive statistic is useful to analyzed descriptive questions. The writer used descriptive statistic to know the characteristic of data according to result of mean, standard deviation, and range.

- 1) Mean

Mean is the sum of scores divided by number of scores. The mean is something called the arithmetic mean to distinguish it from other forms of mean such as the harmonic mean or geometric mean. Because it is sometimes abbreviated as M with or without a bar over it (Kaswan & Suprijadi, 2016:108).

- 2) Standard Deviation

Standard deviation is the most widely used measure of variability of a set of data inferential statistical procedures (Kaswan & Suprijadi, 2016:110). The standard deviation is calculated by taking the squared root of the variance that is, the square root of the sum of the squared deviations from the mean divided by the total

number of scores (N) if the data set is population or by N-1 if the data set from sample. Mention that standard deviation is refers to average of the difference between individual score in a distribution and average score for the distribution.

3) Range

Range is the size of the difference between the largest and smallest score in a set of scores (Kaswan & Suprijadi 2016:109).

b. Normality Test

After the writer analyze descriptive statistic, the researcher used normality test to know the result of the data is normal or not. Normal curve or distribution is a bell shaped curve or distribution is a theoretical distribution is a bell shaped curve or distribution is a theoretical distribution which shows the frequency or probability of all the possible values that a continuous variable can take (Kaswan & Suprijadi, 2016:116). Because the result of the data is normal so the writer used t-test to computed and analyze the data.

c. t-Test

Student's t-test is a parametric test which is used to discover whether there are statistically significant differences between the means of two groups (Kaswan & Suprijadi 2016:122). The results of applying the t-test provide the researcher with t-value. That t-value is than entered in a special table of *t* values which indicates whether, given the size of the sample in the research; the t-value is statistically significance.

G. Research Procedures.

1. Preparation

Organizing teaching procedure, in this research, the researcher served as the teacher for both experimental and control groups. As the preparation of learning process, the researcher organized teaching procedure in two steps. The first step was preparing the appropriate materials and media for teaching and learning process during the treatment. The second step was preparing the lesson plan for both experimental and control group.

2. Implementation

The researcher created the test items for both pre-test and post-test and also constructed statements for questionnaire. The Researcher implementing treatment for both experimental group using Jigsaw Technique as a strategy Collaborative approach (Jigsaw technique) and the scientific approach for the control group. In the final step, the post test was conducted in the experimental and control group.

3. Evaluation

In this section, the researchers evaluate their score and find out differences between experimental group and control group. If there the different which means there are different between collaborative approach (Jigsaw Technique) and Scientific approach.